Name:

Date:

1. The average snowfall at BWI Marshall Airport is 22”, with a standard deviation of 1.2”.   
   Use this information to answer questions 1a – 1i.   
   1. What percent of years had snowfall that was 2 standard deviations **below** average?
   2. What percent of years had snowfall that was 2 or more inches below the mean?
   3. Snowfall above 25” is considered “unusually snowy.” What percent of years had snowfall above 25”? (1pt)
   4. How many inches of snow fell in the least-snowy 10% of years?
   5. What percent of years had more than 21” of snow?
   6. Find the third quartile (75th percentile) for snowfall.
   7. What percent of people years had snowfall between 20” and 23”?
   8. What is the range of snowfall for the **middle 80%** of years?
   9. What is the range of snowfall for the **middle 50%** of years?
2. 2009 – 2010 had two snowstorms back-to-back. That winter, 77 inches of snow fell at the BWI Marshall Airport. Is this snowfall unusual compared to what is described by the Normal model? Explain.
3. SAT math scores are normally distributed. For males, the mean is 527, with a standard deviation of 124. For females, the mean is 496 with a standard deviation of 115.  
   1. Which group, males or females, are **more consistent** in their scores? (More consistent means **less varied**.)
   2. What percent of girls scored **higher than** the average boys’ score of 527?
   3. Which is more unusual, a girl who scores 546 or a boy who scores 577?
4. SAT scores are normally distributed with a mean of 500 and a standard deviation of 100. The creators of the SAT are distressed by the difference in scores for various ethnicities. They want to change the standard deviation in order to make the results more consistent. Should they increase or decrease the standard deviation?